

THE HOME-LIFE OF
THE OSPREY
C. G. ABBOTT

LONDON: WITHERBY & CO.

THE HOME-LIFE OF THE
OSPREY.

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Birds

THE HOME-LIFE

OF

THE OSPREY

PHOTOGRAPHED AND DESCRIBED

BY

CLINTON G. ^{Albert} ABBOTT, B.A.

ASSOCIATE OF THE AMERICAN ORNITHOLOGISTS' UNION

WITH SOME PHOTOGRAPHS BY HOWARD H. CLEAVES, ASSOCIATE OF
THE AMERICAN ORNITHOLOGISTS' UNION.

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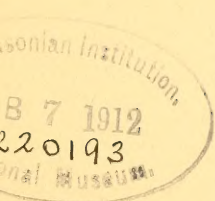
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THE HOME-LIFE OF THE OSPREY.

WHEN, in 1897, after living in England, circumstances brought me to the United States, it was an interesting task to try to identify the confusing throng of birds with which I found myself surrounded. Of all my new acquaintances, none made a greater impression upon me than a large brown hawk, which I knew could be none other than the Osprey, and which I was amazed to find commonly fishing in the waters about New York. Although scientists have separated *Pandion haliaëtus carolinensis* from its European congener, *Pandion haliaëtus haliaëtus*, by reason of its slightly greater size and whiter breast, it is, to all intents and purposes, the same bird, and indistinguishable in the field from the fast vanishing British bird.

I had often read of the lonely Osprey tenants of one or two silent Scottish lochs, with the watchful eye of a warden constantly upon them, and my surprise can therefore be imagined when I saw my first American Osprey's nest. It was at a popular seaside resort in New Jersey, and perched on a tree overlooking a lake full of row boats and noisy holiday-makers.

From these beginnings my acquaintance with the Osprey has gradually grown. Although my field-work is necessarily limited to the brief opportunities of a business man, I have, during the past ten years, found it possible, on several occasions, to make a fairly close study of this bird on its nesting grounds. The gregarious habit of the American species renders its observation particularly feasible

and interesting. My chief fields of operation have been : various points on the coast of New Jersey, where I have spent several summers (going to and fro from New York every day), and where Ospreys are locally quite abundant ; Great Lake, North Carolina, where there are thirty nests, and near which I camped from June 16th to 23rd, 1909 ; and, especially Gardiner's Island, New York, which contains perhaps the largest known colony of Ospreys, and which I have been privileged to visit upon three occasions. In addition, I have seen various isolated nests, and have gathered together a not inconsiderable mass of general notes, such as a bird-lover might be expected to accumulate about a species in which he is particularly interested.

Ospreys, or Fish-Hawks as they are more commonly named in the United States, arrive from the south in the region of New York about the end of March, when the ice has disappeared from lakes and rivers ; they depart again in the early part of October. During migration they may be seen flying even over the built-up portions of the city, or fishing in the park lakes. Near settlements of immigrant foreigners I have known of disgraceful cases of ruthless shooting of these noble birds for no apparent purpose other than a mere test of markmanship. In one instance the corpses of no less than three Ospreys were found close to an old tree, upon which the birds were accustomed to perch. Yet in spite of persecution, Ospreys still nest, or attempt to nest, annually within the city limits of New York.

The inspiring and picturesque manner of capturing its prey is undoubtedly the characteristic for which the Osprey is most famous. Fortunately for the ornithologists in America, the bird is still sufficiently common to afford even the casual bird-student ample opportunity of witnessing its interesting manœuvres while in search of a meal. The height from which an Osprey will descend for a fish varies. His eye is exceedingly keen, and not infrequently he will spy a victim while soaring at an elevation of two or

three hundred feet. When intent upon food, however, he usually works at a height between thirty and one hundred feet. Alternately flapping and sailing, he flies leisurely over the water, his head distinctly bent forward as he diligently scans the surface. Suddenly he pauses and hovers, on rapidly beating wings. His gaze is doubtless fixed upon a fish below, but for some reason, conditions are not favourable for a descent, and he passes on. Again his attention is arrested and his course checked. This time he drops to a lower level and starts for the water, only to veer off and fly away as though he had suddenly changed his mind. Probably the fish had sought a lower level at the last moment, and it was evident to the Osprey that a plunge would be futile. But finally the opportunity arrives. Hardly pausing in his flight, the Osprey drops like a plummet through the air, and, striking the surface of the water with a resounding splash, is obscured from sight in a mass of foam. Sometimes, indeed, he disappears for an instant altogether beneath the water. But immediately upon emerging, his broad wings are vigorously flapped, and he mounts into the air triumphantly bearing his prey in his talons; for when an Osprey once decides to plunge, he very seldom rises "empty-handed."

In descending upon a fish, the Osprey drops with half-folded wings, and appears to strike the water with his breast; the legs are then thrust downward with lightning rapidity, and the body is brought into a horizontal position. After grasping the fish he immediately starts to fly, often laboriously at first and unsteadily, by reason of the strugglings of his victim. As soon as he has risen to a height of from eight to twelve feet, he invariably shakes the spray from his plumage by a convulsive quivering of his wings and body. For this brief instant his momentum is checked, and he falls perhaps as much as four or five feet. After quivering once or twice a bird will sometimes lose so much altitude that the fish is nearly dragging in the water, and he is compelled again to resume flight. Then, perhaps,

he will give another final shake to satisfy himself that he is rid of all possible surplus moisture, and will rise steadily to the level of the tree-tops, when an even course is maintained until the nest or the favourite feeding-perch is reached.

The Osprey's invariable method of carrying a fish head foremost, in order to avoid resistance to the air, is well known. Normally, the fish is grasped firmly in both talons, and there appears to be no preference in holding either the right or the left leg forward. In the case of a very small fish or a fragment, one foot only is often employed, the other being perhaps in normal flight-position—extended to the rear under the tail. Friends of mine have seen Ospreys turn a fish round in mid-air, so as to bring the head to the front, and also transfer a small fish from one foot to the other. When both talons are engaged, the position of the fish is toward the rear rather than under the centre of the bird (*vide* Plate 30*a*). Large fish are occasionally seen to extend beyond the end of the bird's tail. Not infrequently the fish is carried on its side, or belly up, but, as always, pointing in the direction of flight. There appears to be no definite rule as to just what part of the fish shall be grasped by the bird's talons. Sometimes the feet are so far apart that the fish's body sags between them; at other times the feet are both held so near the fish's head that its tail droops and flops at each wing-stroke.

With both talons occupied in the carrying of a fish, I had been puzzled at the ready ability of an Osprey to alight upon the branch of a tree, or the pointed top of a telegraph pole. But close observation, assisted by the work of a rapid focal-plane camera shutter, has revealed that just as the bird approaches a perch, the hinder foot (be it right or left) is disengaged and stretched forward. This free talon grasps the perch first, and instantly the fish is slapped down by the other talon and held securely beneath the weight of the bird. In some of my photographs it may be seen that at the moment of alighting, the tail of the fish, released

from the support of the hinder foot, is starting to drop downward in the air (*vide* Plate 33*b*). Similarly, in flying from a perch with a fish, I have noted that at the moment the bird first rises, the fish is held only by the forward foot; the other is then more or less deliberately clasped on behind. In this connection it might be stated that Ospreys often exhibit a surprising disinclination to eat their prey. I have seen them bear it about for hours, settling, flying again, soaring, but ever holding fast to the precious fish. One almost forgets that it is food, and could imagine it is something the birds cannot rid themselves of!

The varieties of fish fed upon by the Osprey appear to be limited only by its ability to catch them. Any fish that ascends to the surface of the water, and is not too large or too small to be extracted, appears to be welcome game. The inhabitants of salt and fresh water are equally taken. The only species worthy of particular note is a flat-fish, commonly called the Flounder, which I have often observed Ospreys carrying. This is naturally a "bottom" fish, and fishermen declare that the bird will descend four or five feet into the water to capture it as it lies in the shallows. However, ichthyologists inform me that the Flounder sometimes comes near to the surface to strike at food.

With the ingenuity instinctive to the bird-photographer, my friend Mr. Howard H. Cleaves, of Staten Island, New York, conceived the idea of attempting to photograph an Osprey plunging, by the use of an imitation fish. Through a friend in the American Museum of Natural History, he secured an accurately coloured wax model of a large Goldfish—a species the Osprey is commonly seen to take in the spring, when waters are still murky from the winter's floods. From the under-side of the fish extended a strong wire rod which, during experiments, was driven into the mud in a shallow part of a large pond, holding the fish near the surface of the water, as though basking in the sunshine. On three separate occasions, April 19th, April 23rd, and May 7th, 1911, Mr. Cleaves set out the fish and

focussed his camera on the spot. Although Ospreys visited the pond on each of the days, it was only on the second that any success was achieved. I will present the incident in Mr. Cleaves's own words :—

“After concealing my camera, I attached a thread to the shutter and carried the end to a chicken-house, a hundred yards off, where I sat down on a box to wait. Soon a Fish-Hawk came in over the pond from the bay outside, where he had been hovering from time to time in search of salt-water fish. As he swung gracefully over to my side of the pond and advanced in the direction of the decoy, poising himself now and again, my pulse quickened. But much to my disappointment, he passed directly above the fish and apparently took no notice of it. Then he flew back to the opposite end of the pond, and once more worked his way along the shore toward the camera. This gave me new life, and I was further encouraged when he seemed to hesitate for a second or two above the spot where the fish was anchored. I was convinced that this supposition was correct when the Hawk flew to a dead tree, and then deliberately returned to a position directly above the fish. After hovering for a few moments the bird returned to the tree. Then he flew out over the fish again, and once more went back to his perch. This performance was repeated fully four or five times. The bird was evidently puzzled; but he was also hungry. At last he circled about to a point south of the “fish,” and glided very cautiously down toward it at a gradual slant. He did not make the usual sensational plunge, but seemed to lower his talons into the water quite deliberately, as if a bit suspicious and inclined to feel his way before taking firm hold of his quarry. At the moment his feet entered the water I gave the thread such a vigorous pull that the camera was turned half way round, as I afterwards found.

“The bird arose with empty talons and returned to his perch on the tree. I ran to the water, waded out up to my knees and found that the fish had entirely disappeared.

Feeling about, I came across it at last, lying flat on the bottom. The force of the grip had evidently been considerable to dislodge the wire and upset the fish. The Hawk's claws had left five marks on the decoy, two on each side of the back in front of the dorsal fin, and one on the right side of the dorsal fin toward the rear."

The negative, which was unfortunately under-exposed, represents the bird with the entire legs and end of the tail submerged, wings raised aloft, and neck stretched forward—an attitude of evident upward striving. The experiments were all carried on in the early morning before visitors began to throng the shores of the pond, which is quite a populous neighbourhood. An amusing incident, witnessed by myself on the last occasion, was when Mr. Cleaves, after waiting unsuccessfully for several hours, strode into the water and emerged triumphant with the large Goldfish in his arms, before the astonished gaze of picnickers who had arrived in the meantime!

My best opportunities for studying the nesting of the Osprey have been at Gardiner's Island, a roughly triangular piece of land some three thousand acres in extent, which lies about three miles from the eastern point of Long Island. My visits to this world-famous breeding colony of Ospreys have been: July 4th to 11th, 1903, in company with Dr. Philip H. Bahr, a member of the British Ornithologists' Union; July 4th, 1905, in company with Dr. Wm. C. Braislin, a member of the American Ornithologists' Union; and July 2nd to 6th, 1910, in company with Mr. Howard H. Cleaves, Assistant Curator in the Public Museum, New Brighton, New York. In addition, a party of five members of the Linnean Society of New York visited the island from June 8th to 14th, 1911; and all have kindly placed at my disposal such of their valuable notes as relate to the Osprey.

Gardiner's Island is in many respects an ideal resort for Ospreys. It is surrounded by waters rich in fish; in fact it is an important source of supply for the New York markets.

The island has remained in the possession of the Gardiner family since it was first ceded to them by the Indians in 1637 for "ten coats of trading cloath." The birds have therefore been favoured not only with the protection afforded by natural isolation, but with the zealous guardianship of generations of owners interested in their welfare. Excepting a few fishermen, who are permitted to build shanties for shelter while tending their nets, all persons must secure permission to land upon the island. As a result, the Ospreys have been practically free from human molestation. Gardiner's Island has been likened to the Isle of Wight, and although perhaps the definite points of resemblance would be hard to designate, nevertheless the simile is an indication of the natural beauties of the Ospreys' chosen haunt. Maintained as a great farm and game-preserve, its vistas present a pleasing succession of rolling meadows, thick coverts, stately trees, lakes, and grassy marshes (Plate 2*a*).

When one approaches the island from the south, as I did on my original visit, the first nest to be seen is one perched on the top of a weather-beaten old rock in the water, about two hundred yards from shore (Plate 3*a*). Its entire setting is quite ideal, and strongly suggests the historic sites of the old Scottish Ospreys' nests described in St. John's classic "Tour in Sutherland." Surely no more romantic introduction to the Osprey at home could be desired.

Upon landing, perhaps the most surprising discovery is the number of Ospreys' nests built directly upon the ground (Plate 1). With memories of previous nests straddling inaccessible crotches in the tops of tall trees, it is certainly a delight to be able to gaze with perfect ease into the homes of these magnificent birds as one walks along the beach (Plate 2*b*). For the majority of ground nests are confined to the sea-beach—just why, it is hard to determine. The fact is, Ospreys' nests on Gardiner's Island are placed in almost every conceivable situation.

They are on trees by scores, both high up and low down ; on rocks and boulders, whether on land or in the water ; on sheds and buildings ; on fences and walls ; on piles of debris ; on old stumps ; on a floating wooden platform intended for the fishermen's use ; on a channel buoy ; on sand-buffs ; on pieces of wreckage, driftwood, and fish-boxes. The birds even attempted to build on the slender stakes supporting the fish-nets ! In all of these varied nesting-sites, however, it will be noted that at least the suggestion of an eminence has probably first attracted the Ospreys to the spot. Similarly, many of the ground nests are found to be very close to some prominent object—itsself incapable of supporting the nest—such as a post, a notice-sign, a telegraph pole, or a pointed stone. The high, shelving beach, with its tempting piles of seaweed, probably appealed to some of the first ground-nesters as an “eminence,” and their offspring have come back and chosen a similar nesting-site. At all events, in 1910 there was a succession of no less than twenty-two nests at intervals varying from eleven yards to three hundred yards along the beach, on the south-westerly side of Gardiner's Island. Some of the most recent additions to the beach-nesting colony had certainly quite lost any instinctive attraction for an “eminence” ; their nests being a mere scattering of sticks in the edge of the marsh-grass—in location suggesting more the humble home of the Tern than the eyrie of the noble Osprey.

It is evident that only an island could afford protection sufficient for the undisturbed existence of Osprey's nests upon the ground. On the mainland, the penalty of such a departure from normal instincts of self-preservation would doubtless have been speedy annihilation. But on Gardiner's Island there are no predaceous mammals, no egg-eating rodents, or other enemies of the birds, and the ground-building Ospreys are as safe as those nesting in the tree-tops. It must not be inferred, however, that Gardiner's Island is unique in harbouring the ground nests of Ospreys.

Audubon observed them thus placed on the Keys of Florida,* Virginia fishermen tell of them on certain of the islands of that coast, they are recorded from Maine† and California,‡ while Plum Island, New York, contained ground-nests to the number of "one hundred or more" in 1879§ before Government fortifications and invading civilization drove all Ospreys from the place.

The number of Ospreys' nests on Gardiner's Island is hard to estimate. They cover so large an area, and are built in such a variety of sites, that it is a difficult matter to count them. There is one elevated point from which twenty-four nests are visible. Altogether I should say that two hundred nests would be a reasonable estimate. An idea of the abundance of the nests may be gained from the following reference in my diary to a short walk I took on the afternoon of July 3rd, 1910: "I must have seen at least twenty-five nests of whose existence in 1903 I had no recollection. In addition there were dozens whose general location I thought I recalled. They were everywhere! Starting from our shanty there is one on the top of a thick vine-covered tree within a stone's-throw; in the small wood across the first field there are three; in the trees that mark the first fence, two; in trees about a little swamp in the next field, four; in the straggling strip of woods that leads back toward the beach, at least ten; while away across the island, silhouetted against the sky, was an extra big nest in a dead tree with its owners standing like statues above it (Plate 3*b*). The heads of young could be seen peeping above the rim of almost every nest." It is encouraging to note that the Gardiner's Island Ospreys seem to be holding their own well, and perhaps to be even increasing. On a certain stretch of beach between two fences there were three nests in 1903; in 1910 there were seven.

* *cf.* MacGillivray, "Description of the Rapacious Birds of Great Britain," p. 121.

† "Bird-Lore," IX., 1907, p. 327.

‡ Anthony, in Bendire's "Life Histories of North American Birds," I., p. 322.

§ Allen, "Auk," IX., 1892, p. 317.

The variety of nesting-material employed by Ospreys was well exemplified in the easily examined ground nests. The main composition is of rough sticks and branches, driftwood, brush, clods of earth, cow-dung, and horse-dung, dried herbage and plant stalks, bark, seaweed, eel-grass, and moss. The softer materials are used to form the broad, flat, bed of the nest, only a small portion of which is required to contain the eggs. That flotsam and jetsam of any kind come not amiss as supplementary structural material, may be judged by the following catalogue of heterogeneous oddities, personally observed by me in Ospreys' nests: strip of oilcloth, newspaper, cork-floats for nets, long string of conch's "eggs," tow, dead crab, rung of a chair, wheel of a child's mail-cart, half a barrel-head, barrel-staves, large piece of white canvas, stake with piece of rope tied to it, part of a fisherman's net, sheep's wool, straw bottle-cover, coloured paper flour-bag, turtle's back, boards from boxes, dead skate, ropes up to five yards long, bones, sacking, bottle corks, skeletons of dead birds (White-winged Scoter, Red-breasted Merganser, Horned Grebe, Pheasant and Common Tern identified), wing of Black Duck, large whelk and conch shells, small shells, stones and pebbles. The Ospreys gather their nest-materials on the beach and in the fields, and they have also been seen to break off the dead branches of trees by dropping upon them and grasping them with their talons.* Although the time of active nest-building is in early May, the birds are continually adding to and repairing their homes. Well on in July they may be seen sailing about with a large bough or trailing bunch of eel-grass in their talons.

The size of the nests varies as much as the kind of building material employed. It is reasonable to suppose that the largest nests are usually the oldest, annual repairs for successive occupations having gradually increased the bulk

* Chapman, "Bird-Lore," X., 1908, p. 153; and Kearton, "Our Rarer British Breeding Birds," p. 64.

of the structure. Such is undoubtedly the case in many instances, but by no means in all. For example, on my visit to Gardiner's Island in 1903, I photographed a beach-nest which was some four-and-a-half feet high—the tallest ground nest on the island. In 1905, I again photographed the same nest, and comparative measurement of the prints (gauged by the old bird) shows practically no change in the size of the nest. In 1910 a nest standing on the same site was hardly one-third as large. In 1911 my friends measured and photographed the largest beach nest, which I at once recognised as my old subject, arisen within one year to its former shape and dimensions. Another instance was that of a tree nest, photographed in 1903 and 1910, which was found to have decreased in the interval about one-fifth of its bulk.

Some idea of the weight of an Osprey's nest may be gathered from the fact that a moderate-sized eyrie which was transported from Gardiner's Island to the New York Zoological Park, weighed over four hundred pounds.* A nest such as that illustrated in Plate 4 would probably tip the scales at half a ton. The photograph, which was taken in 1910, can never be duplicated, for the following spring the owners returned to find their home in ruins upon the stone wall at the foot of the tree. The birds, with instinctive devotion to the ancestral cradle, made strenuous efforts to render habitable the nest as it lay. But they were evidently confronted with conditions that they were unable to meet, and in June the eggs were found on a little bed of seaweed placed nearby upon the ground.

It has frequently been remarked that trees which have held Osprey's nests for a number of years gradually die (Plate 5). The branches in proximity to the nest are the first to succumb, followed ultimately by the denudation of the entire tree. This is doubtless attributable to the bulky and decaying mass of the nest itself, to the oil from fish,

* Beebe, "Zoological Society Bulletin," No. 11, 1903, p. 120.

and to the birds' odour. Be it said, however, that as a result of the unusual development in young Ospreys of the sanitary instincts and powers common to all *Raptores*, the nests are usually surprisingly clean and never assume the offensive condition common to those of many other fish-eating birds.

The sides of the Osprey's huge abode are often used by smaller birds in which to construct their own homes. Purple Grackles especially, commonly build in convenient niches among the sticks even of the ground nests. Being naturally gregarious, they will congregate to the number of six or seven pairs in one Osprey's nest. While living in perfect harmony with their lordly host above, they maintain an attitude of respectful deference so long as he is at home. But when the young Ospreys are alone, the Grackles pass boldly among them in foraging for fragments with which to furnish their own table. The only other bird that I have seen taking advantage of this somewhat strange nesting partnership, is the ubiquitous House-Sparrow, which is not to be outdone in variety of nesting-sites! Hiram Miller, gamekeeper on Gardiner's Island, says there are more House-Sparrows living in Ospreys' nests than there are about the Manor House and farm buildings. In addition to the Purple Grackles and Sparrows, Ospreys are recorded to have admitted House Wrens* and even Night Herons† as basement tenants. On the beaches, Meadow Mice have found the nests to be convenient mounds under which to construct their multifarious run-ways. In 1910 I photographed an imposing tree nest, the picture including, besides both the Ospreys, a Purple Grackle, which was about to enter its home, and a Woodpecker's hole in the branch of the tree directly below the Osprey's nest (Plate 3*b*).

These facts all tend to show that Ospreys are of a peaceful and sociable nature. I have found them nesting amid a

* Allen, "Auk," IX., 1892, p. 319.

† Fisher, "Hawks and Owls of the United States," p. 131.

large colony of Florida Cormorants in North Carolina, and in a Night Heronry on Gardiner's Island. They seldom molest other birds, but on the contrary, allow themselves to be pursued and harassed by assailants not one-tenth their size. On Gardiner's Island their chief persecutors are the Kingbird, the Common Tern, and the Red-winged Blackbird. The Kingbird, or Tyrant Flycatcher, appears to regard the approach of any bird, large or small, into the neighbourhood of its nest, as an unwarranted trespass upon its chosen domain, and it promptly proceeds to drive the interloper out. It is almost laughable to watch the great Osprey fleeing ignominiously from its diminutive pursuer. In one instance I recall seeing a Kingbird displace with perfect ease an Osprey from a certain dead branch, for no more ostensible reason than that the Kingbird desired that particular perch from which to hawk for flies.

At the southern extremity of Gardiner's Island is a large colony of Common Tern, and close to, or among the Terns' nests are three or four Ospreys' nests. It is hard to understand why the Ospreys chose to build there, for they are being continually harried by the Terns. I have seen an Osprey driven from her nest by a Tern three or four times within a quarter of an hour. The Tern would swoop at the Osprey close enough to make her "duck." After several swoops the Osprey would take flight, in a more or less unconcerned manner, circle about and alight again. The Tern seemed to take delight in tormenting her big neighbour from sheer "cussedness." Whenever an Osprey flew over the Tern colony it was found to be pursued by several Terns, which would dart at it and cause it to dodge and veer in its flight. Were an Osprey bold enough to settle on a post or telegraph pole within the limits of the Tern patrol, he was never allowed to rest in peace more than a few moments. Nevertheless, the Ospreys at the south end of the island are quite as successful as elsewhere in rearing their broods.

In spite of my observations as to the passive nature of Ospreys, it is common belief among farmers that they will drive away other hawks. They are, therefore, well protected and sometimes encouraged to nest near houses, by the erection of a horizontal platform, or cart-wheel on a tall pole. I have known of a nest on the gable of an occupied farm-house in New Jersey, quite suggesting the home of the Stork in Old-world countries. It is most pleasing to find with what friendliness, the country over, Ospreys are regarded. The fishermen of Gardiner's Island, in spite of the large daily toll of fish which the birds take, bear not the slightest malice toward them. "They are a wonderful bird," declared Mr. Tuthill, the hospitable fisherman in whose shanty we lodged, "and we like them. The fish they take they are welcome to. It is sport to see them plunge; what an eye they must have! Law or no law, we fishermen would not want to hurt them, and it was always Mr. Gardiner's wish that they be left alone. Them and the Sea-Gulls we want to keep. The bird that we have no use for is the Cormorant. They kill lots of fish for us and do not eat them, and drive them out of our nets."

The fishermen set their nets vertically in the water and running from the shore at right angles. At the outer end is an enclosure in which the fish, nosing their way along the net to find a passage, become impounded. The Ospreys have come to learn that this is easy fishing-ground, and they may be seen standing in considerable numbers on the stakes which support the nets (*vide* Plate 3a).

When fishing at the nets, the Ospreys seldom take the trouble to hover, but just drop from a stake, swoop over the water, and snatch a fish in their talons. In open water I have also occasionally seen them seize in this way some fish that happened to be a particularly "easy mark" (as, for instance, in the case of the bogus Goldfish). In picking up dead fish, too, there is plainly no necessity for poisoning, and the bird just dips her feet into the water as she flies. For it must be admitted that the Osprey does sometimes

feed on dead fish—not, however, in the manner of the Bald Eagle, after the fish have become decayed on the shore. It is to the credit of the Osprey that, unlike the “King of Birds,” he is no scavenger! When the fishermen collect their daily catch at the nets, they throw away useless fish, which sometimes die and float on the surface. It is these that the Ospreys occasionally appropriate, usually not more than an hour after death. No other instances were observed of the birds taking dead fish.

As an example of a wholly abnormal perversion of diet, the following incident has been given me by Mr. R. C. Murphy, Curator of Birds in the Brooklyn Museum: “About the first of September, 1903, the postmaster at Mount Sinai, Long Island, told me that a large hawk had been killed by one of his neighbours in the act of raiding a poultry-yard. I called at the place immediately, which was a small farm, where one woman lived alone, about two-and-a-half miles from the nearest water. Upon asking for the bird, I was surprised to find not one of the so-called ‘hen hawks,’ but an adult Fish-Hawk. The woman told me that on the afternoon of the previous day, which had been rainy, she had been disturbed by a commotion among her chickens, and on going into her yard, had found the Hawk with its talons sunk in a hen, and flapping violently in an attempt to fly off with its prey. She had killed the robber with a stick, and had freed the hen, which, however, died during the night. The Hawk which she gave me, was in a starved and emaciated condition, and was, of course, much bedraggled from lying out of doors in the rain. I preserved only portions of its skeleton.”

Occasional frogs* or water-snakes† form about the only other variation from the piscine bill-of-fare of the Osprey, and these can hardly be regarded as evidences of abnormal appetite in a bird accustomed to capture fish and eels.

* Gentry, “Life Histories of the Birds of Pennsylvania,” II., p. 278.

† Spreadborough, in Macoun’s “Catalogue of Canadian Birds,” p. 288.

So firmly are the Osprey's claws imbedded in a fish he has struck, that he is sometimes unable to extricate them when he desires. Many instances are on record* of the bird being dragged under water and drowned by a fish whose strength was greater than his own. Mr. Cleaves once saw an Osprey struggle for some seconds with a fish that was apparently almost the bird's equal. The Osprey became so exhausted that he simply allowed his wings to rest on the surface of the water, with his tail completely submerged; but finally he got the best of the fish (believed to have been a German Carp) and very laboriously cleared the surface of the water, and flew to a dead tree at the edge of the pond.

I have never been fortunate enough to witness the oft-described battle between a Bald Eagle and an Osprey, when the former intercepts the successful fisher and harasses him until he is compelled to drop his hard-gained prey. Nevertheless, this common method of obtaining a meal on the part of the lazy Eagle offers proof that the Osprey is, under these circumstances at least, amply able to release at will his hold upon a fish. In fact instances of the bird's drowning are all the more surprising in view of the readiness with which the bird will drop its prey when on the wing. A shot, a well-directed stone, or even a clap of the hands will often have this effect. In other cases the bird will release its grip from sheer anxiety on behalf of its nest; and still again from no apparent cause whatsoever. When a fish is accidentally dropped from a perch or over the edge of a nest, the Osprey, beyond a little craning of the neck in the direction the food fell, makes no attempt to recover the lost booty. Dried fish and eels caught in the sticks on the sides of nests perhaps indicate that here has been a catastrophe with which Nature has not fitted the Osprey to cope.

The first part of the fish to be disposed of seems invariably to be the head. This must often be torn off shortly after

* cf. Naumann, "Birds of Middle Europe" (ed. 1905), V., p. 161; and Dresser, "Birds of Europe," VI., p. 146.

capture, for a large percentage of the fish seen carried by Ospreys or brought to the nests are headless. Mr. E. H. Baynes, of Meriden, New York, who kept two young Ospreys in a state of semi-domesticity, writes thus of their manner of eating* : " They often began by picking out the eyes, perhaps because those organs were conspicuous and easily removed. They held their food in their claws, and usually before seizing any part of it, they would "finger" it, so to speak, with their bills, as though feeling for a good hold. They would tear off large pieces, jerk them backwards into the throat and swallow them. They ate every part of a fish except the harder bones. Tough pieces were removed by a steady upward pull, and the ends of bones were twisted off with a pivotal movement such as a man would use to draw a nail with a pair of pincers. Later, they ejected the bones and other indigestible particles in the form of pellets."

The first Ospreys' eggs are laid on Gardiner's Island, according to Hiram Miller, in the beginning of May. At the time of my visits the nests have practically all contained young, although I have seen unhatched eggs as late as July 5th—probably a second laying, due to some misfortune earlier in the season. They are about the size of hen's eggs, and extremely handsomely marked with all shades of reddish-brown and claret upon a creamy ground. The usual number of eggs is three, occasionally only two, and seldom four. If the eggs are well incubated, or if the young have hatched when a mishap occurs, the bird will not lay again. But she does not always relinquish her affection for the nest: although it be empty, she will sometimes stand on its margin for weeks, and occasionally decorate its bed with fresh weeds. It is quite surprising to see a bird rise from her nest with cries of apprehension on one's approach, and then to find that the nest is empty. It is a distinctly touching evidence of the maternal instinct in birds.

* "Scribner's Magazine, XLI., 1907, p. 701.

I am informed by Mr. W. W. Worthington, of Shelter Island, New York, that the period of incubation is twenty-four to twenty-eight days. When the young hatch, the old bird seldom if ever removes the egg-shells from the nest. They are frequently to be found lying on the edge of a nest containing well-grown youngsters, and at other times the crushed fragments are mixed with the nesting-material under the young birds.

When he makes his first appearance in the world, the baby Osprey is covered with a short, firm down, more like fur than feathers (Plate 6*a*). It is striped longitudinally with brown and buff. Like smaller birds, he is provided with a supplementary knob on the upper mandible, to assist him in breaking his way through the egg-shell. His eyes are open from the first. The naval cord is unusually conspicuous in the centre of a circular area of bare skin. At first the cere and feet are pink, and the toes are arranged as in the majority of birds, namely three to the front and one to the rear. Not until later is the evolutionary adaptation of the reversability of the outer toe developed. The interior of the mouth and tongue of the new-born bird are red. When approached, he holds up his open mouth for food, in the instinctive manner of smaller altricial birds. His only utterance is a single, weak monosyllabic sound. He is very susceptible to the direct rays of the sun, and exhibits great uneasiness even on a moderately hot day. In view of the usually unsheltered situation of most Ospreys' nests, it is plain to see how essential to the welfare of the young is the parents' protecting shade. The mother bird is well aware of this fact, and when her babies are callow, will often exhibit heroic courage in her eagerness to afford them the shelter of her body.

As the down grows it becomes fluffier, and the light and dark tracts are more contrasted in colour. Meantime the feathers, in their dark, pulpy sheaths, have been pushing their way through, and soon the down from their tips may be found clinging to the sticks in the nest. In the

half-downy, half-feathered stage, and in subsequent plumages, it is remarkable how exactly the young Ospreys match the bed of the nest (Plate 6*b*). They have a way of lying prone in the presence of intruders (Plate 7), and it is often almost an impossibility to determine from a short distance whether a nest is empty or contains young. Even when looking directly into a nest, one's attention will perhaps be attracted by two youngsters, and a third that may be lying toward one side will be completely overlooked. So still do the young birds lie, that were it not for their breathing one could believe them dead. Usually they rest their heads on one side, or hang them over the edge of the nest in a peculiarly death-like attitude. They will allow flies to walk directly over their eyes, without exhibiting the slightest movement. If, however, the observer stands motionless for awhile, the little fellows soon begin to stir. Their first act is usually to hold up their heads and open their mouths, so that they can breathe more readily, for in the neighbourhood of New York at least, the month of July, when the young Ospreys are in the nest, is apt to be very hot. Soon the youngsters will have their tongues out and be panting like dogs, with a drop of moisture on the tip of their lower mandible or of their tongue. In all of the photographs herewith, when a young bird has its mouth open, it is due to the heat and not to any utterance, for young Ospreys are, in the main, very silent individuals. Not until they are well feathered have I ever heard them emit anything approaching Osprey-like sounds; I have then observed them imitate the cry of their parent overhead, in a charmingly babyish and amusing manner.

At this latter age they add to the death-feigning instinct of the earlier period, a most interesting habit, which we may term "looking fierce." If, as they lie flat in the nest, they are approached too closely or touched, the first sign of life is a bristling of the feathers on the back (Plate 7). If the intrusion be continued they rise suddenly in the nest, and turn toward one with ruffled feathers and glaring eyes,

which, coupled with a desire to bite when opportunity offers, is evidently calculated to scare the boldest of assailants (Plate 8). It does not take one long to discover, however, that this display of fierceness is mere show, and that even with its formidable bill the young bird is apparently incapable of inflicting a painful wound. The attitudes assumed by young Ospreys during this "looking fierce" operation are often ludicrous in the extreme. They will spread or trail their wings, lower their heads in wicked fashion (Plate 9*a*), raise their crests, and in general assume as formidable an aspect as possible. Sometimes they exhibit the power of extending the feathers of the throat and cheeks, forming a sort of mask.

After standing for a few moments in this "terrifying" attitude, the strength of the young bird begins to ebb and his muscles to relax; he will fall back on his "heels," and his head will begin to droop forward. At this stage he will often be resting on "all fours," so to speak, the "shoulders" of his wings acting as supports to the fore-part of his body. They gradually give way, however, and the bird's bill comes closer and closer to the nest (Plate 9*b*), until at last he is once more in his original prone and death-like position. A fresh disturbing will arouse another display of "fierceness," though less vehement, and so on until the youngster becomes so disinterested that one must put one's hand under the bird's body before he can be induced to rise to his feet. If a young Osprey is raised above the level of the nest, he invariably clutches at the nesting-material, and it is a difficult matter to release it from his long, curved talons.

While their young are being thus examined, the parent birds circle overhead with loud screeches. Although there are many indubitable records of their boldly attacking intruders in defence of their nest,* I have found them, for the most part, very ready to remain at a respectful distance. It is only occasionally that I have met with one courageous

* cf. "Auk," XII., 1895, p. 361; and Newton, "Dictionary of Birds," p. 662.

enough even to swoop at me, and then with no more viciousness than a Tern, and not as close. Once, when the keeper was on the beach at Gardiner's Island with a dog, an Osprey swooped many times at the dog, coming closer than it would dare to a human being. But as a rule the birds soon cease swooping, and indulge in vocal, rather than personal, protestations.

I have often stood, pencil in hand, and tried to put upon paper the remarkable variety of screams to which nervous Ospreys give voice. The commonest note is a shrill whistle, with a rising inflection: "Whew, whew, whew, whew, whew, whew, whew." This is the sound usually heard during migration; and when the bird is only slightly alarmed. When she becomes thoroughly aroused, it will be: "Chick, chick, chick, cheek, cheek, ch-cheek, ch-cheek, cheereek, chezeek, chezeek," gradually increasing to a frenzy of excitement at the last. Another cry sounds like: "Tseep, tseep, tseep—whick, whick, whick-ick-ick-ck-ck," dying away in a mere hiccough. And there are endless variations quite incapable of syllabification. In addition to these loud screeches when disturbed, the Osprey has other notes which are unexpectedly weak for so large a bird. As we lay in our shanty, the Osprey's notes from without would sometimes recall more the peeping of a chick that has lost its mother, than the voice of a magnificent bird of prey!

One cry that my friends and I have particularly observed on our visits to Gardiner's Island, is often reserved for occasions when the bird is carrying fish. She will then sometimes be seen to pause in her flight, extend her legs downward to their fullest extent, hover on rapidly-flapping wings and call out—very appropriately—"Feesh, feesh, feesh, feesh." Upon recognizing this cry we were seldom disappointed in finding our bird—although sometimes she goes through the antics without a fish—just extending her legs. In such cases and others, where the legs are caused to drop during flight (which is not an uncommon occur-

rence) they never dangle loosely, but are held rigid with the "fists clenched." Upon the resumption of normal flight, the legs are drawn back under the tail, without being bent and with the "fists" still clenched. Sometimes they are not pressed firmly up against the tail-feathers, and from the side, light can be seen between the outstretched legs and the tail.

An amusing "fish story" in connection with the Osprey is told by the fishermen on the coast of Virginia. The patient Fish-Hawk, after having been many times thwarted of its rightful prey by the Eagle, at last manages to steal away and consume a meal in seclusion. He then flies forth into the open, and flapping his wings calls loudly, "Feesh, feesh." The Eagle, at the welcome sound, rushes from his perch and assails the Hawk. Whereupon he lets fall from his talons the meatless bones of the fish he has just eaten, and flies away with (we may imagine) an audible chuckle of delight!!

One of two methods was used in obtaining all the photographs of the adult Ospreys reproduced herewith. Either the camera was set up near the nest and released by a long thread from some hiding-place, or else—a much more satisfactory method when the birds would permit it—a "blind," concealing both operator and camera, was placed close to the nest (Plate 10*a*). The type of blind we used is of the now well-known umbrella variety, originally invented by Mr. Frank Chapman; it consists of an open umbrella draped about with denim, thus forming a little tent inside of which the photographer can work unseen.

I know of no more inspiring ornithological experience than the intimate acquaintance which the ground nests of the Osprey afford to the observer in the blind. The audible touch of the bird's feet, as she alights upon the nest (Plate 10*b*), the flash of her eye, the raising of her crest (Plate 11), the cry of recognition, and the following gaze as her mate flies overhead, the ruffling of the feathers to keep cool, the tender survey of the youngsters at her

feet—and a hundred other little incidents—can be enjoyed in all their minutest detail. The more conspicuous acts can be well seen through a field-glass, but never with the same satisfaction as a near-at-hand view.

In the presence of the blind, or the camera alone, the Ospreys displayed great variability in their willingness to return to their homes. Some would be back on the nest before we had gone one hundred yards, others would wait a whole morning, or decline to return at all. This variability of temperament is very conspicuous throughout one's photographic operations with these birds; and not only do different Ospreys vary, but the same birds vary greatly at different times. An example of unusual confidence was afforded by the mother Osprey shown in Plate 12*a*. She returned to her nest before I even had time to reach the end of the thread I had attached to my camera. Indeed, as may be seen from the photograph, two of the young are only just starting to "relapse" from their threatening attitudes assumed at my recent proximity to the nest. The photograph also forms an interesting comparison in the appearance of a parent and her full-grown young. At this age, the only conspicuous difference is that almost every brown feather on the youngster is edged with buff. These edgings have a peculiarly frayed appearance, even when the feathers are brand new. Spring specimens would indicate that the buff edgings disappear by abrasion, to form the uniformly brown coat of the adult.

Although the full-grown young differ imperceptibly from the adult in size, and although they appear well able to take care of themselves, they are, as a matter of fact, perfect babies. The three represented in Plate 12*b* were quite incapable of flight, in spite of their fully-developed wings, and in spite of their fierce looks they were absolutely harmless. The only wounds which they inflicted upon us were caused by their already fully-developed talons, in their violent attempts to gain a foot-hold upon our wrists, when we carried them from their nest to the branch

where they were posed. In this connection it is worthy of note that when the young Osprey had gained the centre of gravity, it would stand on the wrist as lightly as a pigeon, and there would be not the slightest pressure of the sharp claws ; it was only in the case of overbalancing or displacement, that their existence became so painfully evident. The toes of the bird on the left illustrate the usual perching attitude of Ospreys—two to the front and two to the rear. After taking the photograph we attempted to toss the youngsters back into their low nest ; but they were unable to regain it even although they struck quite close. So we were obliged after all to climb the tree and place the birds actually on the nest. Throughout the entire operations they uttered no sound.

In the use of the blind it is always advisable, after the photographer has hidden himself within, to have a companion walk ostentatiously away. The birds seeing him depart, are seemingly reassured, and will sometimes return to their nests at once. When working alone I have often been painfully impressed with the fact that Ospreys, if they cannot count two, can at least count one ! In such cases it is useless to attempt to steal into the tent unseen ; they well know that danger is still present. Upon one occasion I called upon a friendly fisherman to do the "retreating act," when, after hours of exasperating waiting, I was almost instantly rewarded with success. On the other hand, there are many birds less suspicious than their neighbours, which will after awhile readily accommodate themselves to the tenanted blind, although no attempt whatever has been made to divest it of its human personality. An amusing illustration of how completely an Osprey can come to disregard the blind and its human occupant, was afforded on an occasion when I was operating a cinematograph camera. I was desirous of arousing the bird into flight without leaving the blind. Starting with low coughs and faintly audible sounds, I was forced to pass through a varied category of gradually increasing

alarm-signals, until, with my head exposed, with my handkerchief waving, and with loud shouts, I finally induced my bird (about one hundred feet away) to take wing!

When her nest contains young, the female Osprey will usually be found standing like a sentinel on its edge or on a conspicuous perch close by (Plate 13). At the approach of the intruder she utters a querulous whistle; as her anxiety increases her complaint becomes more shrill, until it reaches an almost hysterical pitch. Meanwhile, she leans forward as though ready to take flight at any moment, and when convinced that it is no longer safe for her to remain, she unfolds her great wings (Plate 14), and with loud screams precipitates herself into the air (Plate 15). To the casual observer the birds seem to hurl themselves into flight in a variety of attitudes. But my cinematograph films reveal that the wings are extended upward to their fullest limit, ready for an instant down-stroke, before the bird's feet leave the perch.

In returning to her nest the Osprey will, if there is any air stirring, always fly up the wind. In case, by reason of the presence of the camera or otherwise, she decides not to alight, she flies straight on, then turns so as to make a broad oval detour, and again comes up-wind. The invariability of this rule is of great assistance to the photographer, and he can obtain broadside, head-on, or rear views of the bird, merely by placing his camera according to the direction of the wind. Mr. Cleaves's remarkable picture of an Osprey in flight, as seen directly from behind (Plate 16*a*), was no haphazard piece of luck. The camera was carefully pointed in the face of the wind and focussed on a handkerchief placed on an upright stick beyond the nest. The stick was then removed, and later, as the bird was springing from her nest, the exposure was made.

A suspicious Osprey will often repeat dozens of times the operation of approaching her nest, as if about to alight, hesitating in the air, and then passing on. Each time she swings about, describing the same detour with the

utmost regularity. The tantalization of the photographer, who is eagerly awaiting in his blind the moment when the bird will settle, can readily be imagined! After some experience, it is often possible to determine from the position of the bird's body and its legs, some distance before it reaches its nest, whether or not it is going to alight on that particular occasion. The same fact can even be conjectured from photographs.

Of the various idiosyncrasies of the Osprey, the one the photographer has learned to dread the most is the occasion when the bird, after passing a number of times over her nest, alights instead on some other perch. It may be a telegraph pole, a rock, or the snag of a near-by tree; but once it has been selected in preference to the nest, it is more than likely that the photographer's "game is up." No matter how many times the bird is aroused into flight, it will, thereafter, nine times out of ten, be the perch and not the nest that will end its detours. When once the owner of a nest has got the "perching" habit, the photographer may just as well pull up stakes and start operations on another nest.

In the bird-world I know of no more pleasing picture than an Osprey settling upon her nest. As she nears its edge her legs are extended, and her broad wings beat the air rapidly as she "puts on the brakes" (Plate 16*b*). At the moment of alighting she raises her wings high above her back, displaying their beautifully marked undersurfaces (Plate 17). There may be a few extra flaps as the bird gains her equilibrium (Plate 18), and then, unless again disturbed, she will stand practically motionless for hours (Plate 19).

The devotion of the female Osprey to her nest is almost marvellous. When one realizes that all the mental anguish which the bird evidently undergoes in facing the battery of the photographer, is merely for the satisfaction of standing near her young, he must acknowledge that we have here an example of wondrous parental love among birds. She

seldom feeds them, she does not caress them—she just wants to be near them, and gaze upon them.

One day I had the good fortune to make some intimate studies of an Osprey that was as devoted a bird-mother as I have ever known. She had no imposing nest to be proud of; it was just a mass of rubbish, scattered indiscriminately on the ground. But that nest contained a downy youngster, which was more to her than the loftiest and most ancient domicile along the beach! And every moment she was not standing at his side, she was unhappy. I had been attempting to photograph the owner of a tall nest not far away, but the bird was "cranky" and preferred patronizing a stake in the water, to standing on her nest in front of that hideous, mysterious blind. During the intervals of waiting, and my attempts at urging her to change her mind, I observed the loving and constant attention of the Osprey in the humble nest among the grass close by. Slinging my camera over my shoulder, I drew from the ground the supporting rod of my umbrella blind, and, without emerging, started to walk slowly over to the new nest. The owner gazed in astonishment at the approaching apparition, and, as it came nearer, sprang into the air in terror. I continued to stalk onward, fully developed in the folds of the blind, until I was within twelve feet of the nest, when I thrust the rod once more into the ground and opened-up my camera.

Round comes the bird well above the nest, suspiciously eyeing the blind (Plate 20). The next time she swings gracefully in, as if about to settle (Plate 21). But no, there is that strange and motionless monster standing so close, and checking herself she hovers, kestrel-like—gazing apprehensively at the blind (Plate 22). Her courage fails her; she turns in the air and passes on (Plate 23). The mental struggle between the instincts of self-preservation and love for her offspring is almost pathetic; but the latter is destined soon to triumph, for after the usual wide detour, she again comes up the wind, this time deter-

mined to settle. She reaches forward with her feet, checks with her broad wings the momentum of her flight, (Plate 24) and settles. For an instant there is the usual pleasing glimpse of the barred under-surface of the wings, before they are folded to her sides (Plate 25*a*). Immediately the chick, which has been gasping in the noon-day heat, seeks the cooling shelter of his mother's breast (Plate 25*b*). He wriggles his way under her, until his head is thrust even between her thighs, and then at last both birds are content.

More than once, for photographic purposes, I was compelled to scare the mother into flight; but once she had learned there was nothing seriously to fear in the tent, it was completely ignored in her haste to be once more beside her baby. And when my last plate was used, I stood and gazed in admiration on the example of heroic maternal devotion before me. It is doubtless common enough in the bird-world, but I can testify that to stand within twelve feet of a truly wild creature, whose majesty is second only to that of the Eagle, and see her shield her chick with all the tenderness and solicitude of a barn-yard fowl, arouses within me a thrill of satisfaction such as few ornithological experiences are capable of doing.

On very hot days I have observed Ospreys skim close over the water, trailing their legs, their tail, and the tips of their wings on the surface. The owners of the beach nests especially love to make short sallies over the cooling element so close at hand. Upon returning to their nests, a few drops of moisture will occasionally fall upon the young; but I can hardly credit the assertion, that the bird deliberately cools the contents of the nest by "sprinkling."* Similarly, I have sincere doubts whether the "grateful shade" over the young,† of the parent's outstretched wings, is not more accidental than intentional. The Osprey when uncomfortably hot commonly allows

* Kearton, "With Nature and a Camera," p. 194.

† cf. "British Birds" (Mag.), I., 1907, p. 40.

the "shoulder" to droop, and for coolness sake slightly extends her wings. Occasionally she holds them broadly outspread (Plate 26), whether alone on a perch, or with her young.

The violent panting of the young birds shown in the nest on Plate 27, is evidence of the intense heat at the time the photograph was taken. The gaze of the old bird is directed seaward, not without cause; for the photographer, fleeing the scorching temperature of the beach, has retired into the water, whence he is operating his thread release! The small, white object dimly visible in the background is doubtless Dr. Bahr, who was similarly engaged on another nest further up the beach, and has probably emerged for the purpose of changing a plate.

It is a surprise to discover how seldom the young Ospreys are fed. Persons have commented, in looking at my large series of photographs, that in almost every instance where the bird is flying to her nest, she is coming empty footed; and it is a fact that to observe an Osprey in the act of feeding her young, is an unusual occurrence. I think they are not fed more than twice a day, or three times at most; yet they are always plump and healthy. Naumann, with characteristic German exactness, even specified for the Osprey a breakfast from 8 to 9, and a mid-day meal between 12 and 2, the bird seldom fishing meantimes.* I have seen the bird catch fish at practically every hour of the day; but it is an interesting coincidence that I have records of Ospreys bringing food to the young only prior to 8 a.m., around mid-day, and after 4.30 p.m. However, when a man is busied with photography, his attention and the range of his observations are necessarily limited.

Early each morning, while Mr. Cleaves and I were on Gardiner's Island, we could watch an Osprey feeding her young in a nest perched on an old, tangled vine, which covered a tree not far from our shanty. The incident

* *cf.* Naumann (1905), V., p. 159.

and hour are impressed upon me by Mr. Cleaves's naive remark that, "There are probably not many places on earth where one can wash up the breakfast dishes and see through the window at the same time an Osprey feeding her young!" As we seldom returned again to the shanty until after dark, we had no opportunity to observe at what other times of day food was brought to this particular nest.

The Osprey's method of feeding her young is to hold down the fish with her foot, and tear off morsels with her bill, which she gives to the little ones (Plate 28). The latter, which are at all times models of good behaviour, quietly raise their heads and take the proffered food. There is no rush or scramble, no vulgar assailing of the parent, as in the case of some Herons. Indeed, the youngsters often display a surprising indifference. They will look up to greet their mother when she alights on the nest (Plate 29), but I have never seen them standing on tip-toe and waving their wings expectantly, as some artists would have us believe.

The only opportunity I ever had of photographing at close quarters an Osprey with a fish, was on my last morning at Gardiner's Island in 1910. Resolved to make the best of the hours intervening before our boatmen should arrive to take us off, we were up before daylight and started with our cameras just as the sun was peeping above the horizon. The previous night I had left my blind near a certain beach nest, and Mr. Cleaves accompanied me to the place, saw me safely inside, and by his departure did much to insure the prompt return of the mother bird. She was soon back on the nest, but at once noticed the lens of my camera. Turning so as to face me squarely with both eyes, she peered intently at the blind, moving her head from side to side, horizontally. Then with a cry of alarm she sprang into the air, and flew back and forth above the nest. Occasionally the two half-grown youngsters in the nest would arise and start to move about; but at the sound of their mother's warning note they would

crouch instantly, and remain flat and motionless until they felt that the cause of alarm had passed. Then they would raise their heads, only to lower them again at the next passage of the old bird over the nest.

While I was watching these proceedings, and impatiently wishing for the parent to become more accommodating, I was delighted to see the male suddenly appear with a fish in his talons and fly over the nest (Plate 30a). The morning light was still so weak, that I was unable to make an exposure of sufficient rapidity to insure an absolutely sharp picture, although the resulting photograph shows pretty satisfactorily the method of carrying the fish.

He circled about, and as he again approached the nest, he released his hold on the fish with the hinder (in this case the left) talon, which was brought forward to grasp the nest and affect a landing (Plate 30b). I had only time to change my plate before the female unexpectedly appeared, and sweeping down, alighted beside her mate (Plate 31). In the meantime, there had been no attempt made to feed the young with the fish, which the male still held under his foot.

With visions of a long series of pictures illustrating the feeding operation at close range, I eagerly got my camera in all readiness. Suddenly, without warning, both old birds flew from the nest. The male, carrying the fish with him, circled about a few times and then, much to my disappointment, alighted on a drift-log a short distance down the beach. Of all actions this, I knew from experience, was the least indicative of future success, and hope of his prompt return to the nest was further dissipated when I saw him bend over and start leisurely eating the fish. In the meantime the female had completely disappeared. In vain I waited; neither bird evinced the slightest interest in the nest. After half an hour I was obliged to depart, whereupon the male flew up with the fish, of which he had eaten but little. Although I removed the blind, he still avoided the nest like something bewitched, and settled again on

his old perch. Such is an example of the unaccountable nervous variability of the Osprey, which one constantly meets in attempting to photograph this species.

In spite of all I had learned during my visits to Gardiner's Island, the important question of just how often the young Ospreys are fed still remained but vaguely answered. Largely with a view to obtaining some definite data on this point, I decided to encamp, on July 8th and 9th, 1911, for an entire twenty-four hours near a single Osprey's nest. Naturally many observations beside those bearing on the feeding question were made; in fact a somewhat detailed account of my intimate "week-end" visit to the home of the Ospreys may not be out of place. The locality selected for my operations was a region known as Atlantic Highlands, in New Jersey, where I had long known that Ospreys were abundant. The particular nest I set forth to study was one described to me by a friend, who had seen it while motoring down the road alongside of which it is built. He had obtained some excellent photographs of the birds merely by stopping his machine and snapping his camera while in the car.

If was about 5 p.m. on July 8th, when the boat on which I had come from New York approached her pier at Atlantic Highlands. There were then forty-four adult Ospreys flying about and perched on the series of fish nets in the lee of Sandy Hook. I counted eleven on one net and eight on another. I also saw one bird plunge from a height of about fifty feet and catch a fish, with which it alighted on a stake. It is worthy of note that this group of Ospreys lives only about nineteen miles from the crowded down-town district of New York, and their home is accessible in less than an hour by the fast steamers of the Sandy Hook Line.

The nest to which I had been directed was situated on the outskirts of the town of Atlantic Highlands. I was considerably disappointed upon reaching it to find that it was deserted. According to a resident whom I questioned, it had not been inhabited since the second

summer previously—the year my friend photographed it. That autumn, it seems, during the burning of some underbrush, a part of the nest had been damaged by fire. The next spring the birds returned, and spent considerable time about their old home, attempting to put it in order. But for one reason or another they were not satisfied, and went off in search of a fresh site. At the time of my visit the ruin was occupied only by a couple of pairs of House-Sparrows, whose nests were built in the lower sticks.

Knowing that there must be more nests in the neighbourhood, I started off in search, and had not walked two hundred yards before I spied another eyrie. It was conspicuously perched on an old dead pine, which stood on top of a ridge and commanded a broad view in two directions. Both old birds were at home, the female being on the nest and the male close by on a branch of the tree. In no pair of Ospreys have I ever seen the sexes more clearly differentiated, the breast of the female being heavily streaked with brown, and that of the male practically pure white. The female, too, was noticeably larger.

As soon as they saw me the birds started to complain, and when I had approached within about thirty yards they both took wing with loud screams. I quietly seated myself at the foot of a tree and remained motionless, but the birds were evidently very much annoyed at my presence and continued to fly back and forth, plainly “bending their eye” upon me each time they passed. Their outcry was so great that two or three Osprey neighbours appeared, to see what the matter was, and circled about for awhile before passing on. I then changed my position and hid under a dense oak tree, where I was well screened by the trailing branches. Although actually nearer to the nest than before, I was much less conspicuous, and the female alighted at once on the perch, where the male had at first been standing. He had by this time disappeared.

The nest, which was about twenty-five feet from the ground, is illustrated in Plates 14, 15, and 26. The trees

stood in a neglected orchard, in a surprisingly public situation. It was surrounded by four highways, all within two or three hundred feet, on which were five inhabited houses. A little further away were dozens more houses. Noisy trains and electric cars could be heard in the immediate vicinity. Beneath the tree where I was sitting, empty biscuit boxes and newspapers of recent date told of the popularity of this spot for picnic purposes. A large "For Sale" sign, not a stone's throw from the Osprey tree, added the final note of incongruity. A well-worn footpath passed close by the tree; and I think it speaks well for the American public that the nest had not been robbed.

While it was still light I slipped out from under the far side of my tree, without disturbing the Osprey, and made a short survey of the surrounding country, in order to ascertain if there were other Ospreys' nests near by, and to assure myself that I had selected the best for photographic purposes. I saw no new nests within a radius of half a mile or so, and a lad whom I questioned said that most of the birds had their homes considerably further inland. He said that the nest I had found was the closest of all to the water. His statements were supported by the flight of Ospreys in the air, at least two of which I saw carrying fish directly inland. The nearest nests he knew of, he said, were one in the midst of a wood, and one on a telegraph pole about a mile down the railway track.

Returning to my nest about 7.15, I found that the female Osprey was still standing on the perch where I had left her, and the male was on another snag nearer the nest. Upon my approach he took wing, carrying off with him a fair-sized (headless) fish, which he had evidently caught since I saw him. The female remained on her perch, and allowed me to get under the oak tree without flying. But she could evidently see me through the interstices of the leaves, and would whistle querulously whenever I made any conspicuous movement during my informal supper, and

later when I began to make preparations for a flashlight photograph. When I emerged from under the tree in order to set up my tripods, she sprang into the air with loud cries and made off. The work of adjusting my camera and flashlight apparatus, with their various threads, etc., in the gathering gloom, proved to be a lengthy operation, and all was not in readiness till 8.45. As official sundown occurred at 7.30, it was already dark, although a hazy moon enabled me to see slightly. While I was working, the female Osprey flew over about every twenty minutes and whistled ; and shortly after I had finished and retired, she flew over again, but did not alight. At 9.15 she returned and settled directly on the nest. I waited, but as there was no sign of the male, I set off the flash at 10 o'clock. The Osprey uttered a faint outcry, but did not even take wing. She complained more loudly as I moved about, covering up my camera, etc., and could evidently see me fairly plainly in the dark.

I then rolled up in my umbrella blind and made myself comfortable for the night. All was quiet till 11.25, when I heard a slight commotion and a low greeting, and looked up to find that the male had alighted on his original perch. At first, I could plainly see his head silhouetted against the sky, but within a quarter of an hour it was apparently tucked "under his wing." In the impressive stillness of the night, I lay there beside my sleeping birds, myself, as it were, a part of wild Nature for the time being.

At 3.5 the first cock crew ; and it was not many minutes before sundry squawks and quacks announced the awakening of the entire barn-yard company. At 3.35 I saw the male Osprey stretch his great wings, in the same sleepy fashion as any creature stretches himself on waking of a morning. Then I could discern him bending forward and moving on his perch. I attempted to raise my glasses to my eyes, but, dark though it was, he evidently saw me and flew.

Brief extracts from my notes will serve to record some of the many succeeding incidents of the dawn and the day, which space precludes reciting in full detail ;—

3.55. Bird-chorus begins ; Barn-Swallows first heard, Chipping Sparrows next, followed by Robins, Meadow-Larks, Wood-Pewees, Flickers, etc. Real chorus only lasts about fifteen minutes ; then birds seen everywhere seeking food and carrying it to their young.

4.15. Although still seventeen minutes before official sunrise, and very misty (I could not see more than fifty yards), male Osprey returns with a good-sized fish. Alights directly on nest with female, and leans forward out of my sight. Presumably feeding young, as I can occasionally catch a glimpse of his back moving. Female's head never lowered and remains visible just above margin of nest, in exactly same position since first light enough to be distinguishable.

4.25. Male, which is very timid, takes alarm at my slight movements and flies, without fish.

4.35. Male returns and resumes feeding young (?). Female's head in meantime unmoved and never out of sight.

4.40. Osprey neighbour flies over, and my friends greet him.

4.45. Male again becomes disturbed and leaves nest, circles about a bit, squealing, then disappears. Female's head always just visible ; appears to be watching me all the time.

5.20. Sparrows living in Osprey's nest have been feeding their young since about 4.15 ; great chirrupings and squabblings unobserved by Ospreys ; there are apparently two Sparrows' nests.

5.25. I got up, and female complained loudly. Male promptly appeared, flew back and forth whistling, and then was gone. I went out to reconnoitre, and saw male standing on top of a linden tree about 150 yards away, where he had doubtless been during recent intervals of absence from nest. When he saw me he flew over, and circled about, complaining, then re-settled in the same tree.

6.30. Heavy mist receding. I can now see as far as the bay ; water very calm. Some half-dozen Ospreys

visible fishing; apparently not many on fish stakes. Surprising that Ospreys still fish so much by natural method, when one would expect them to be spoiled by ease of extracting food from net enclosures.

6.45. Osprey visitor appears; male comes and drives him off with great rush of wings. Visitor insists on circling about; male pursues him with loud screeches.

7.0. One young bird, about two-thirds grown, rose in nest, ruffled feathers, and moved about. As this was the first glimpse I had yet had of contents of nest, I put up glasses for better look. Instantly mother whistled, and youngster squatted out of sight.

7.30. Female becoming used to me; no longer complains when I move about under oak tree.

7.40. Erected umbrella blind under oak tree, and walked out with it over my head. This was too much for Mrs. Osprey, and she flew—first time to-day. When next I saw her she was circling round with a stick in her talons (holding it head foremost). I set up blind about thirty feet from Osprey tree. She alighted on nest so soon after I got into blind and was fixing things, that I did not actually see her carry stick to nest; but she must have done so. Nor did I see her arranging it in nest—just standing there.

8.0 She is very suspicious of blind, and complains whenever I move in it.

8.30. I happened to look up (from my breakfast!) and saw male standing on his favourite perch. Took photo; started to change plates (very slight noise)—he was gone. Looked again; he was back! Not a sound from him meantime. While I was getting better focus, he flew again so precipitately that he scared off wife also. He disappeared but she was back within two minutes, and alighted on perch.

9.5. Male arrived (without fish), alighted on nest and bent over youngster. Mother hopped down from perch, and all three were in the nest together. Mother spread wings and said, "Ker, ker, ker" (low), and shuffled about

nest in strange fashion. Little one raised head, moved about nest, and repeated mother's note in miniature. Father very suspicious of tent and soon flew.

9.20. Rushing sound over tent reveals male chasing his old rival—swooping down to earth from great height.

9.30. Great commotion among Sparrows, as new pair trying to build are despoiled by others.

9.45. Young bird again standing up. It is evident there is only one youngster. Uttering weak, squeaky note. Plainly uncomfortable in heat.

10.0 Bird getting used to tent; seldom complains. To induce her to fly (for photographic purposes), I have to go out of blind and walk toward tree.

10.25. Woman passing close at hand, with eyes on ground, picking wild-flowers, suddenly observes umbrella blind, with evidence of occupant. Beats hasty retreat in alarm!

10.50. Female Osprey lets one leg hang full length in front of branch, supporting herself on the other foot only. When male calls overhead, she looks up in very pretty manner, often answers, and with motion of her head, follows him in flight.

11.0. Male pays nets a short visit. No fish.

11.15. I find that when female Osprey is about to settle on nest after flight, she will, if I wave my arm, often alight on perch instead, which is more picturesque for photographs. When she is on nest, youngster will get close to her breast, and look up at her in loving fashion. Mother has no favourite place on nest where she prefers to stand. At first it was on opposite side of nest from where I happened to be (whether under oak or in blind); but now she is becoming almost oblivious to my presence. Both parents approach the nest up-wind.

11.45. Owner of house close by, who has been watching me from his porch, comes over to make inquiries, thinking aeronaut, with balloon, has come to grief! Says nest has been here at least twenty-six years; been blown down

and rebuilt several times. Says time for fish is early morning and evening. Invites me to luncheon in his garden, where I can also watch birds.

12.5. Male returns without fish, settles on nest; scared at blind flapping in wind—departs.

12.50. Nine Ospreys counted soaring high in cloudless sky. Round and round they would go, some of them mere specks in the sky, crossing and recrossing each other's orbits, sweeping on motionless wings with wondrous ease of flight. Even female could not resist fascination, and joined them for about five minutes.

My new-found and hospitable friend, whose family were old residents of the neighbourhood, had some interesting Osprey anecdotes to recount to me over the open-air luncheon table. Some two years previously, a tree containing an Osprey's nest had been struck by lightning. Of the two young birds, one was killed, one was unhurt, and the mother was injured—all three being thrown to the ground. The mother, he said, when he attempted to capture her, fought "like a cat," even ripping a buckskin glove which he wore. The living youngster he took home, and fed on "killies" (small fish) and fowls' mash, upon which it thrived. After about a month he released it. The Ospreys, he asserted, were undoubtedly decreasing in the face of advancing civilization. He said that in the proper season he has got many a good shad for dinner, merely by standing near the water's edge and throwing stones or clapping his hands as the Ospreys flew over with their prey. He declared that the birds drop the fish more readily if scared before they have got fairly started inland, and are still flying low. Only the day previous to our meeting he had, by clapping his hands, caused an Osprey to drop an eel two feet long, which was found to be still wriggling.

The afternoon with my Ospreys in the orchard was largely a repetition of my morning experience. The male returned three times up to six o'clock, but brought no fish. He also flew over a few other times without alighting.

I could recognize him by a feather missing in his tail; I also imagined I could distinguish his voice from others. Throughout our acquaintance he was always much more timid than his wife, and took alarm on the slightest provocation. She, on the other hand, became tamer and tamer, until her fearlessness was almost absurd. By five o'clock I had no need for the blind whatsoever, and could stand out in the open, camera in hand, and snap her from any angle I desired. I regretted the plates I had exposed in the morning on unsatisfactory and distant views. The bird was not in the least "moody," like so many Gardiner's Island Ospreys, and when scared off, always came back to her nest promptly. Even the baby was allowed to sit up in the nest and watch me, occasionally moving his head quizzically from side to side after the manner of his parent, without being commanded to "squat." When I compared the adult bird's present attitude of complete confidence with the nervous apprehension which she had exhibited upon my first arrival the previous evening, I rejoiced in this new example of what has many times been manifested to me in my bird-photographing experience, namely that wild-birds will often comprehend in a surprisingly short space of time, just which conditions possess an element of danger for them, and which do not. In other words, a spirit of sympathy, even though unconscious, seems somehow to be reciprocated by many wild creatures—a fact that bears a plain enough moral for us all.

At six o'clock I "struck camp," and leaving my friend to watch the Ospreys, I walked down the railway track to photograph the nest on the telegraph pole referred to by the boy the day before. No birds were near it when I reached the spot (except some Sparrows nesting in the sticks), and though I waited some time, none appeared. Believing the nest deserted, I exposed my last plate upon it, to show the situation, and started away. I had not gone three hundred yards before both Ospreys came to the nest together, the second one bearing a fish! The illustration

of the telegraph-pole nest (Plate 32*a*) forms an interesting companion to a picturesque nest on a fence which I photographed on Gardiner's Island (Plate 32*b*). During my short side-trip to and from this nest, I counted ten Ospreys in the air, five of which had fish. I saw two birds carrying fish within a few yards of each other. All the fish-carrying birds were flying straight inland.

I found, when I got back about 7.15, that the male Osprey had returned with a fish. The female was bending over in the nest as if feeding, and he was standing on a low snag of the tree. My watcher stated that the bird had arrived with the evening meal about seven o'clock.

Some hasty work was necessary for me to pack up, enjoy the supper which my friend insisted on providing, and catch the last boat for New York; so that I was unable to watch the Ospreys further. But these facts I had at least definitely recorded during my observation of this pair of birds: (1) Only three fish had been brought to the nest in twenty-five hours—one at 7 p.m. on July 7th, one at 4.15 a.m. on July 8th, and one at 7. p.m. on July 8th. The facts might indicate a morning and evening feeding each day; (2) The female was never absent from the nest long enough to feed herself; (3) The female exhibited a devotion for and constant attendance upon her nest and young, such as can exist in very few species of birds. Of course, the rules of one nest do not necessarily apply to others, and it is more than possible that my constant presence near this nest created an unnatural situation. Then, too, the fact that in this instance there was only one young bird, would doubtless have a bearing on the number of fish brought to the nest. Even with these qualifications the results, I think, warranted the undertaking, and may serve as a stepping-stone to more detailed information in the future. Another acquaintance which resulted from my visit to Atlantic Highlands was that of Mr. Chas. Bauer, an uneducated but warm-hearted man, who had charge of a small pumping-station on the edge of the old orchard

where the Ospreys lived. Like my friend of the morning, he came during the afternoon to investigate the remarkable, domed excrescence which had appeared on the surface of the earth since the previous day. After the necessary explanation, he expressed great interest in my work; and, having learned that I proposed to write a book on the Osprey, he later sent me the following amusing summary of his knowledge of the bird. He stated that it was compiled with the assistance of his friend, Captain Roger Moon, "an old sailor and fisherman." I append the account in exactly the picturesque form and language in which it was received by me:—

"The Osprey or better known as Fish hawk the Male Bird comes Back first in the spring about March 25 if it is nor too Cold. he will begin to repair his nest about a week later the She bird comes, and both work together and love One another on the Nest. They lay 3 to 4 Eggs but they will only breed 2 whatever they do with the other eggs nobody knowes. when they go off in October they come back alone in the Spring wether they are the Old pair or the Young I do not know. As soon as the Egg is laid there will always be one of Birds on the nest to watch it as Mr. Crow likes to get the eggs. When she sets on her Eggs, the Male furnishes her food but mostly Every other Morning she goes to have her bath and then the Old man will sit on the Eggs to keep them warm until she comes back she sometimes hunts her breakfast but very seldom. she hurrys home after her Bath. As if she was afraid that the Old man did nor under stand the business as well as her. Then he goes down the Bay and gets her breakfast while she sits on the Eggs he pickes the fish apart so that she can eat it handy. After the young ones are able to fly then the training begins. The Old ones with a fish fly all arond the nest high in the Air and holler while the young ones look on and hunger for it. by and by they will follow the Old ones down the bay see how it is done and strike out for themselves they leave us about October first.

They Say they go south. but where in the South We dont know. the tide has nothing to do with the hawk their time is usually Morning and Evenings. my Friend tells me their are not half as many Ospreys as their was 40 years ago. The Osprey always looks for a dead tree and if they cant find one they will build on top of any tree that gives them room for their nest but it will kill the tree in 2 years time."

This quaint life-history is distinctly interesting, though manifestly inaccurate in parts, such as that relating to the number of young reared. Even this point, however, gives evidence of some observation. For I have myself remarked on the number of infertile eggs discovered in the nests on Gardiner's Island, and it is certainly a fact that a considerable percentage of Osprey's eggs never reach maturity. Whether the proportion is unusually great in the case of the Osprey I would not undertake to say, but it is my impression that, as a family, the *Raptores* more than any other birds, are unsuccessful in hatching all their eggs. Observations of others corroborate Mr. Bauer's assertions relative to the males preceding the females on migration,* and relative to the male sharing in the duty of incubation and bringing food to his mate on her nest.†

I have never personally observed an Osprey indulging in a bath, other than the necessary immersion incident to capturing her prey, and I rather suspect that Mr. Bauer may have got his terms mixed. Nevertheless, that Ospreys do occasionally enjoy a genuine bath is attested by the following interesting note made by Mr. Cleaves, while on Gardiner's Island : " Creeping up to the edge of Tobaccolot Pond, I spied some large birds standing in the water on the opposite side. Through my glasses I identified them at once as Fish-Hawks, and soon saw that they were bathing. In all I counted nine Hawks standing in water up to their bellies ; in one place there were five together. The birds

* cf. Audubon, " Birds of America " (ed. 1840), I., p. 66 ; and " Auk," IX., 1892, p. 318.

† *id.*, *ib.*, p. 67 ; and Fisher, " Hawks and Owls of the United States," p. 131.

dipped their heads in and splashed their wings vigorously ; then they stood and preened their feathers for some minutes. One bird walked about in the most absurdly clumsy manner, apparently in order to find water of proper depth."

The flashlight photograph which I attempted at Atlantic Highlands proved not to be a success. The reason, as I feared at the time, was that the sleeping bird on the nest was invisible in the photograph, by reason of the angle between the camera on the ground and the nest in the tree-top. Another flashlight experiment, which I made on Gardiner's Island, was similarly disappointing, because the tall branch upon which the bird decided to perch proved to be beyond the edge of the picture. In both cases, however, the practical disregard by the Osprey of the magnesium discharge (though necessarily a heavy one) was quite surprising. Perhaps they mistook it for a flash of lightning ! At Atlantic Highlands as related, the bird did not even leave her nest ; and at Gardiner's Island, of some half-dozen Ospreys perching within a couple of hundred feet, only my particular bird took wing, and she merely circled about and alighted again almost at once. I am convinced that Ospreys can see with considerable distinctness in the dark. I have even observed them flying with fish in the dusk, long after it would be supposed they could see to hunt. Whatever time of night one passes their haunts, one will be greeted with the usual whistles and complaints, and catch sight of the dim forms of the birds passing to and fro, apparently flying and alighting at will.

When the Osprey chicks are still very young, their mother broods them at night much as she might incubate eggs—sitting close and with wings drawn down. When they are well grown she merely roosts upon the edge of the nest, or upon a branch close by. We observed that in the beach nests the young birds, which during the heat of the day find the greatest coolness about the margin of the nest, prefer, for the opposite reason, to huddle at night in a warm

little group at the centre. As definitely observed at Atlantic Highlands, the male comes home to his nest to spend the night. In a colony like Gardiner's Island it is a pleasing experience to observe after nightfall dozens of old Ospreys guarding their nests, each on some gaunt snag silhouetted against the sky.

The life and training of young Ospreys after they leave the nest, I have unfortunately had little opportunity to observe. My visits to Gardiner's Island have all occurred before any of the young were actually on the wing, although already many of them appeared to be fully fledged. In July I have seen full-grown youngsters standing on their nests, and beating their wings in anticipation of the new power that is soon to be theirs. Nevertheless, Nuttall declares that they are sometimes so loath to make a start in the world, that they have to be forcibly driven from the nest by their parents.*

Authorities seem to agree that the young Osprey's life in the nest covers a period of five or six weeks.† On August 13th, 1911, I was unable to find any young still remaining in some half-dozen nests which I visited in New Jersey, especially to enlighten myself on this point. Observations made at that time indicate that the birds will, after fishing, bear their catch as much as three or four miles from the water, in order to devour it on the bed of the empty nest. I also believe the entire family return to the neighbourhood of their old homes to roost.

Once I observed a young Osprey perched on a bough overhanging a lake-side, and watching with the keenest interest his mother, as she quartered the surface of the water, intent on fishing. Whenever the old bird passed, the youngster would call in shrill whistled tones, just as any hungry baby-bird pesters its parent, whether or not the latter has food. Three days later I happened to

* "Birds of the United States and Canada" (ed. 1903), p. 30.

† cf. Chapman, "Camps and Cruises of an Ornithologist," p. 52.

visit the same spot, and saw what was perhaps the same young Osprey, himself with a fish.

Wonderful as are the achievements of all young birds in the matter of flight and the selection of their varied food, there is, to my mind, none more truly worthy of admiration than the first plunge of a young Osprey for a fish. Yet, as in all the other instances, the mysterious dictates of instinct, assisted of course by watching the parents, alone are responsible. Mr. Baynes's two tame Ospreys, which were taken from their nest and reared by hand, started to fish as soon as they were able to fly. Referring to the earliest effort of one of his birds he writes : * "His tactics were similar to those employed by old and experienced Ospreys, but the execution was clumsy. It was the attempt of a tyro, and of course the fish escaped. But in a few days both Hawks became expert."

Similarly, Mr. C. W. Beebe tells of a young Osprey which was brought as a nestling to the New York Zoological Park : † "One day a fish was thrown beyond the line of cavernous-mouthed Pelicans in the great outdoor flying cage, and the young Osprey swooped at it and fell headlong into the water. He half kicked, half flapped his way to shore, and crawled out disappointed and bedraggled. The sight of the fish was just the stimulus needed to give an impetus to an instinct, latent but trembling for expression. After the first blind yielding to impulse, experience entered in as guide and instructor, and a few more attempts made this young Osprey master of his art."

In his famous "American Ornithology," Wilson records seeing a young Osprey meet its parent in the air and receive from him the fish he carried in his claws. This proceeding is probably unusual, however, and has not been noted by such observers as I have questioned. Wilson is also authority for the statement, widely copied but not confirmed by some writers at least, that Ospreys, before they

* "Zoological Society Bulletin," No. 11, 1903, p. 120.

† "Scribner's Magazine," XLII., 1907, p. 704.

leave for the south in the autumn, "regularly" repair their nests, to fortify them against the violence of the winter storms. In the life of all birds there are many facts which only the combined observations of many workers can accurately ascertain. I shall hope to spend many more happy field-days with my friends the Ospreys. Although in some instances "familiarity breeds contempt," in the case of the Osprey this can never be true. There is a nobility and dignity about this bird, an industry and inoffensiveness of life, a tender affection for its mate and young, that can only bring increasing admiration with acquaintance.

PLATES.



"The most surprising discovery" . . .
(Copyright in U.S.A. by H. H. Cleaves.)

Plate 1.



meadows, thick coverts, and stately trees. (a)



A delight to be able to gaze with perfect ease into the homes of these birds. (b)

Plate 2.



Perched on the top of a weather-beaten old rock. (a)



Both the Ospreys, a Purple Grackle, and a Woodpecker's hole directly below the nest. (b)

Plate 3.



A nest that would probably tip the scales at half a ton.

Plate 4.



Trees which hold Ospreys' nests gradually die.



The baby Osprey is covered with a short, prim down. (a)
(Copyright in U.S.A. by H. H. Cleaves.)



How exactly the young match the bed of the nest. (b) Plate 6
(Copyright in U.S.A. by H. H. Cleaves.)



Lying prone in the presence of intruders . . . the first sign of life is a bristling of the feathers on the back.
Plate 7.



Rise and turn toward one, with ruffled feathers and glaring eyes.



Will trail their wings, and lower their heads in wicked fashion. (a)
(Copyright in U.S.A. by H. H. Cleaves.)



The bill comes closer and closer to the nest. (b)
(Copyright in U.S.A. by H. H. Cleaves.)



A "blind" was placed close to the nest. (a)



The bird, as she alights. (b)



The flash of her eye.
(Copyright in U.S.A. by H. M. Creaser.)



A parent and her full-grown young. (a)



In spite of their fierce looks, they were absolutely harmless. (b)



Standing like a sentinel on a conspicuous perch close by.

Plate 13.



She unfolds her great wings



Plate 15.

And precipitates herself into the air.



An Osprey as seen directly from behind. (a)

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Her broad wings beat the air as she puts on the brakes. (b)

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Plate 16.



She raises her wings high above her back.



Plate 18.

A few extra flaps as the bird gains her equilibrium.



She will stand beside her young for hours.

Plate 19.



Round comes the bird, well above the nest.

Plate 20.



She swings gracefully in, as if about to settle.

Plate 21.



Plate 22.

She hovers, gazing apprehensively at the "blind."



She turns in the air and passes on.



Checks with her broad wings the momentum of her flight.



The pleasing glimpse of the barred under-surface of the wing. (a)



Immediately the chick seeks the cooling shelter of his mother's breast. (b)

Plate 25.



Plate 26.

Occasionally she holds her wings broadly outspread.



The gasping of the young is evidence of the intense heat.



Tears off morsels with her bill, which she gives to the little ones.
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Plate 29.

They will look up to greet their mother.
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The male suddenly appeared with a fish in his talons. (a)



He released his hold on the fish with the hinder talon. (b) Plate 30.



The female appeared and alighted beside her mate.

Plate 31.



The telegraph-pole nest. (a)



A picturesque nest on a fence. (b)

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